Gateway

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The ARRL Packet-Radio Newsletter

ROSE BUDS

The Radio Amateur Telecommunications Society (RATS) began shipping early beta-release versions of the ROSE X.25 Switch (formerly COSI-Switch) code in February. Testing is now underway or about to start in 16 states, the District of Columbia and 10 foreign countries.

The switch software is called the "ROSE X.25 Switch" and the Packet Radio Mail Box System (PRMBS) is referred to as the "ROSErver." These and other systems comprise the "ROSE LAN." The ame of the software was changed from COSI to ROSE (RATS Open Systems Environment) because of an organization called the Corporation for Open Systems.

Modes of Operation

The ROSE X.25 Switch provides the user with four modes of operation: local digipeating, multi-switch networking, local switching and international switching.

Local digipeating provides a familiar mode of operation in order to continue within the local network. The ROSE X.25 Switch only digipeats frames with one digipeater call sign (its own) in the VIA field of the AX.25 frame. Within the local network, users may digipeat through the switch by typing:

C N2FWI V N2DSY-2 <CR>

where N2FWI is the call sign of the destination station and N2DSY-2 is the call sign of the local switch.

Multi-switch networking is the only new concept that users must learn in order to use the advanced, multi-switch networking capabilities of the ROSE X.25 Switch. Each switch has a unique, local six-digit address that is made up of two parts: the telephone area code serving the switch's location (first three digits) and a three-digit "Switch Number." In order to connect to another station at a remote switch, one must know the address for that switch. If a user wished to connect to KB7UV, who uses switch 718874, the user would type:

C KB7UV V N2DSY-3,718874 <CR>

(N2DSY-3 is the call sign of the user's local switch.) The call request will be routed transparently to the destination switch and destination user.

Local switching is another option which permits a user to use the advanced functionality of the switch within the local network. This is like a multi-switch connection except that the destination switch address is that of the source switch. A user initiates local switching by typing:

C N2FWI V N2DSY-3,201744 <CR>

where N2FWI is the call sign of the destination station, N2DSY-3 is the call sign of the local switch and 201744 is the address of the local switch (N2DSY-3). Although, this looks like a two-hop digipeater connection, in reality the ROSE X.25 Switch gets into the picture and make the connection more reliable. The ROSE X.25 Switch will receive the request from the user and then send a connect to N2FWI. After this connection is established the switch acknowledges the initial connect request. If required, the N2DSY-3 switch will retransmit frames that are unacknowledged. The switch will use its own parameters to determine the need and ideal opportunity to retransmit. The switch will not only automatically determine the port used by known users, but will search out the unknown user on its user ports.

International switching is used to make network connections across national boundaries. The procedure is the same as for any other switched call, but another field is added before the destination switch address which contains a four-digit field called a "Data Network Identification Code" or "DNIC," which is made up of the CCITT X.121 Data Country Code followed by a zero (see "Proposal: Recommendation AX.121, International Numbering Plan for the Amateur Radio Network" in the Fifth ARRL Computer Networking Conference proceedings). A user initiates international switching by typing::

C VE3XYZ V N2DSY-3,3020,613744 <CR>

where VE3XYZ is the call sign of the destination station, N2DSY-3 is the call sign of the local switch, 3020 is the DNIC of the destination switch and 613744 is the address of the destination switch.

Code Sources

The beta version of the software has been mailed to the beta testers and is available from a variety of sources. Executable code may be downloaded via dial-up XMODEM from the RATS UNIX system, via uucp or via CompuServe's HamNet. For those who prefer an MS-DOS diskette, telephone RATS at 201-387-8896. (Source code is available

at no charge for commercial Amateur Radio use only.)

XMODEM downloading is available by telephoning 201-387-8898 and logging-on using "rats" as your log-on identification. After logging on, the user receives a long message which includes the current directory of files (capture and print this file to simplify operation). The system then prompts for several pieces of information, such as name, call sign, location, telephone, etc. Finally, the system prompts for a file name. After these items have been furnished, the system starts to transmit the file using the XMODEM protocol. When the transfer is completed, the user enters a carriage return and a log-on prompt follows. These steps are repeated for each file to be downloaded.

For uucp downloading, contact Gordon Beattie, N2DSY, by telephone (201-387-8896) or e-mail (ihnp4!hou2d!n2dsy-4!n2dsy). A transfer will be queued for your system and you will be directed to call in and download the waiting files.

For further information or to support RATS, contact The Radio Amateur Telecommunications Society, 206 North Vivyen St, Bergenfield, NJ 07621.

from J. Gordon Beattie, Jr., N2DSY @ KD6TH

NOVICE NOTCH

The 223.54 MHz PBBS port of KB6OWT-1 in Sunnyvale, California, is available and is intended for PBBS forwarding and Novice use only.

from Mike Bothe, KB6OWT

(Gateway would like to continue publicizing Novice packet-radio activity, so if you know of any, please let me know, too. - WA1LOU)

NEW TAPR TELEPHONE NUMBER

Effective immediately, the new telephone number for Tucson Amateur Packet Radio (TAPR) is 602-323-1710.

from Andy Freeborn, NØCCZ,
via CompuServe's HamNet

PACKET RADIO AND THE IRVINE ADOPT-A-SCHOOL PROGRAM

Adopt-a-school is a volunteer program coordinated by the City of Irvine (California) Emergency Services Department. Its purpose is to provide local communications for the schools of Irvine when a big earthquake hits. As you probably know, schools have no communications other than the public telephone system. Since the earthquake will probably knock out the telephone system, the principals of the various schools were very concerned about the possibility of being responsible for hundreds of children with no way to report emergencies or ask for help, as a result, Adopt-A-School was born.

There are now 31 members that cover 22 of the 27 schools in Irvine. Each volunteer has "adopted" a school. (There are often two volunteers at a school depending where the volunteer lives. The city would like to see three or more volunteers for each school.) The volunteer is responsible for meeting with the principal of the school and working out the details of the operation, such as site, power, etc.

How Adopt-A-School Works

The city of Irvine already has in place a volunteer emergency communications group known as the Irvine Disaster and Emergency Communications Group (IDEC). It is a very active group of hams that often helps with communications during concerts, parades, search and rescues, etc. They are basically a volunteer arm of the Irvine Police Department with a fixed station (144 and 440 MHz) located in the police station communications room and a large mobile communications van, which is outfitted with both amateur and police radios. They are advised by Sgt Tim Smith (a ham) who is in charge of communications for the police department.

The Adopt-A-School volunteer program is a subset of IDEC. Most of the Adopt-A-School members are not members of IDEC, however, IDEC will be operational during the earthquake, so they will be manning the radios both at the police station and in the van. Adopt-A-School members have been instructed to go to their schools and come up on the designated frequencies.

Where Packet Radio Comes In

IDEC has been using packet radio for some time. They have a packet-radio station at the police station and in the van. At first, the plan was to have all 27 schools equipped with packet-radio controllers. A volunteer would only have to bring his 2-meter radio to the school and plug it into a city-provided packet-radio controller, which would be connected to a school-provided computer. Some schools even have emergency power which would be made available.

Unfortunately, budget problems got in the way of installing some installations, so a second plan was conceived. The plan has all the elementary schools in Irvine using voice with the three high schools using packet radio. The city has purchased the packet-radio equipment necessary for the high schools and will be installing it over the next few months.

The city felt that the high schools would be natural centers for first aid, shelter and food, and, as such, should be equipped with packet radio before the elementary schools. However, the goal is to have all of the schools of Irvine equipped with packet radio someday. In fact, if the school can raise the money, it is welcome to purchase its own packet-radio controller and use packet radio instead of voice. It is up to the Adopt-a-School volunteer to work this out with his school.

IDEC is also looking into portable packet-radio stations in the event of widespread power outages. These stations will, of course, be used at the high schools.

from The I-Frame, The Newsletter of the Southern California Digital Communications Council

BLIND PACKETEER SEEKS ASSISTANCE

Merv Walsh, KW8P, a blind ham who wishes to join the packet-radio revolution, seeks the assistance of any visually impaired or blind ham using VideoVoice or other screen-reading program with an IBM PC or MS-DOS computer to operate VHF packet radio. Merv can be contacted by mail at 4430 Langstroth Dr, Silver City, NM 88061 or by telephone at 505-538-3597. Your assistance is appreciated.

SAVE YOUR $ AND KEEP TRAFFIC MOVING

Some PBBS system operators (SYSOPs) report that NTS traffic is arriving with bulletin identifiers (BIDs) attached. Users have apparently discovered that they can instruct the latest version of WA7MBL PBBS software to append a BID to any message. This delays forwarding because such messages will sit on a PBBS until the SYSOP either changes its forwarding configuration file or deletes the BID from the message.

To add a BID to a message, a user sends something like this:

ST NTSIA @ 50125 $50125 <CR>

The $50125 is unnecessary and hinders the message's travel. The $ switch is meant to allow PBBSs to forward duplicates of a single message to many other PBBSs, not something one would normally want for a radiogram.

from Indiana Packet NTS Newsletter

THE ERROR-FREE MYTH

An error-free mode of traffic handling... that is one of the best reasons to transmit radiograms on packet radio. But it is a myth. Every month, several radiograms which are loaded with errors arrive in Fort Wayne. They contain incorrect letters in words and incorrect digits in addresses and phone numbers. Some errors affect the meaning of the text, for example, when single-letter errors change "had" to "has," or "will" to "well."

Packet-radio bulletin board systems (PBBSs) are not causing this garbage. You can not blame the digipeaters or NET/ROM nodes. It is not bad propagation or any kind of radio interference. That leaves only one source for the errors...the human who typed the message.

Half of the messages I see on packet radio contain typographical errors. They range from ones that are easy to ignore, to errors which make delivering the message impossible. Even though packet radio is error-free, the radiograms I see contain more errors than those I receive on any other mode.

Unlike most other modes, when you send a radiogram on packet radio, you and the receiving operator are rarely on the air at the same time. No one is watching every character of your output as you send. No one calls probable errors to your attention. This means you have a much greater individual responsibility for accuracy when you send traffic on packet radio than when you use other modes.

You need not be a great typist to send traffic on packet radio, just a careful one. Hunting and pecking is fine as long as you double-check everything before the message is transmitted. An easy way to do this is to type messages before you go on the air. Use a word processor or file editor. When you have looked the message over a couple times and you are sure everything is right, save it to a file. Make sure it's a "straight ASCII" file without special word-processor formatting data. (Some programs use a special command or utility to create "straight ASCII" files; check your software manual.) Connect to your local PBBS and use your communications software to send (sometimes called "upload") the text file. This plan reduces both errors and connect time.

If you cannot save files ahead of time, try to correct typing errors in each line before you enter a carriage return and have the PBBS send you the message when you are done. If you see any errors, kill the message before it goes anywhere else and start over again.

If all packet-radio traffic operators follow these procedures, packet-radio communications will come much closer to being truly error-free.

by Jay Farlow, WB9MDS,
from Indiana Packet NTS Newsletter

BITING THE HAND THAT FEEDS YOU

Scott Cronk, N7FSP, kindly packeted me a copy of his "Nodefinder," which is a NET/ROM node map of the western half of the United States. This massive undertaking will surely be valuable to those with a need to know and I imagine it may be downloaded from various PBBSs on the west side of this country.

Interestingly, "Nodefinder" contains the following note: NET/ROM nodes that are running illegitimate software will not be listed. It seems that instead of paying for their own copies of NET/ROM, some folks are making copies of their friend's NET/ROM. Sound familiar? You've heard of software piracy, well now there is NET/ROM piracy. And now I receive word of a NET/ROM clone coming from the other side of the Atlantic.

In the world outside of our shacks, computer software piracy has forced the software providers to raise the price of their produce in order to make up for the money they are losing to the pirates. The ham-radio world is much smaller. If ham-radio software piracy continues, you will see the ham-radio software providers dry up rather than raise their prices because there are not enough fish in our small pond to make up for their losses!

GATEWAY AT DAYTON

At high noon on April 28, your Gateway editor is going to get in his Subaru and drive 650 miles/14 hours (leaking water pump and balding tires dependent) to attend the Dayton HamVention. I look forward to meeting and talking with all of you who also attend this gala event. (Look for me at the booth that hands out free TNCs. If that booth fails to show again this year, I can be anywhere, so keep your eyes opened!)

GATEWAY CONTRIBUTIONS

Submissions for publication in Gateway are welcome. You may submit material via the U.S. mail to:

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or electronically, via CompuServe to user ID 70645,247. Via telephone, your editor can be reached at 203-879-1348 on evenings and weekends, and he can switch a modem on line to receive text at 300, 1200, or 2400 bauds.

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